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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,485	08/20/2003	Peter J. Skalchunes	50572-28771	7394

7590 09/21/2004  
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EXAMINER
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DAVIS, OCTAVIA L

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/644,485	Applicant(s) SKALCHUNES, PETER J.	
	Examiner Octavia Davis	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims are objected to because of the following informalities: In claims 6, 21 and 30, lines 2, “the sensor” lacks antecedent basis. In claims 8 and 23, lines 1, “the controller” lacks antecedent basis. Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 5, 12 – 14, 16 – 21, 27 – 29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Sick.

Regarding claims 1, 16, 17, 27 and 32, Sick discloses an optical apparatus for monitoring thread breakage comprising a sewing apparatus and a thread breakage detection apparatus 20 coupled to the textile sewing apparatus, the thread breakage detection apparatus comprising a light source 42 operable to generate a light beam 33, an emitter 42 in communication with the light source, the emitter operable to emit the light beam, and a receiver 19 in communication with the emitter, the receiver operable to receive the light beam emitted from the emitter and to communicate the light beam to the detector, the emitter 42 comprising a first fiber optic cable 14 comprising proximate and distal ends, the proximate end of the first fiber optic cable in communication with the light source and the distal end of the optical cable in communication

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with an emitter lens 23 and the receiver comprising a second fiber optic cable 15 comprising proximate and distal ends, the proximate end of the second fiber optic cable in communication with a receiving lens 23 and the distal end of the second fiber optic cable in communication with the sensor, the receiving lens disposed in facing opposition to the emitter lens (See Cols. 3 and 4, lines 60 – 68 and 46 – 59).

Regarding claims 2 and 4, the light beam 33 comprises a wavelength in the infrared range (See Col. 3, lines 64 – 68).

Regarding claims 3, 19 and 28, the receiving lens 23 comprises a diameter, the diameter substantially equal to or less than a diameter of a thread disposed in the textile sewing apparatus (See Col. 22 – 30).

Regarding claims 5, 20 and 29, the receiving lens is operable to focus the light beam 33 on a surface of the proximate end of the second fiber optic cable 14 (See Cols. 3 and 4, lines 64 – 68 and 31 – 38).

Regarding claim 12, a distance between the light beam and a thread disposed in the textile sewing apparatus comprises a range between approximately 10 millimeters and approximately 25 millimeters (See Col. 5, lines 5 – 9).

Regarding claim 13, the textile sewing apparatus comprises a carpet tufting apparatus 15 comprising a yarn guide plate and a needle bar 13, 13' (See Col. 3, lines 31 – 47).

Regarding claim 14, the emitter 42 is disposed proximate to the yarn guide plate and the needle bar 13, 13' (See Fig. 1)

Regarding claim 18, the emitter 42 is in communication with the light source and the receiver 19 (See Col. 3, lines 60 – 64).

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 – 11, 21 – 26, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sick in view of Kothe et al.

Regarding claims 6, 8, 21, 23 and 30, Sick discloses all of the limitations of these claims except for a teaching that a first processor and a second processor are provided, the first processor being in communication with the light source, the detector, and the second processor, the second processor being operable to control the textile sewing apparatus. However, Kothe et al disclose a sensor system for regulating machines comprising controllers 22, 23 in communication with a light source 16 (See Col. 3, lines 11 – 22).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify Sick according to the teachings of Kothe et al for the purpose of, independently adjusting the sensitivity of the evaluating stage based on the respective properties of the material to determine certain edge identification of the material (See Kothe et al, Col. 1, lines 32 - 40).

Regarding claims 7 and 22, the second processor comprises a relay.

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Regarding claims 9 – 11, 24 – 26 and 31, Sick lacks the first processor 23 is operable to associate a first value with a quantity of light emitted from an emitter 55 and to associate a second value with a quantity of light received by a receiver 17 and comparing the first and second values. However, in Kothe et al, a comparator 21 is provided which includes an adjustable switching threshold of which the control members 22, 23 adjust (See Cols. 3 and 5, lines 10 – 13 and 1 – 5).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify Sick according to the teachings of Kothe et al for the purpose of, comparing a stepwise coarse sensitivity adjustment to a fine sensitivity adjustment (See Kothe et al, Col.2, lines 11 – 16).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pestel et al (4,742,789) teach an automatic sewing and joining of textiles.

Smela (6,360,615) discloses a position/movement sensitive effect-emitting strain gauge.

Hangarter et al (4,622,910) teach a button hole sewing device.

Rawson (EP 2136564) teaches a thread monitor device for a textile machine.

von Stein (4,691,647) teaches an optical thread breakage monitoring apparatus for tufting machines.

Tancs (4,841,890) teaches a sewing machine thread break detector.

Sick (4,625,666) teaches an optical thread breakage monitoring apparatus.

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Rohr et al (4,754,722) teach a thread break detector for a sewing machine.

Beasley (3,587,497) teach a thread breakage detector.

Kato (5,832,851) teaches a sewing machine in which needle clearance is easily adjustable.

Lind et al (3,818,236) teach an apparatus for detecting broken threads.

Arnold (5,199,365) teaches a thread monitoring arrangement for monitoring sewing thread at different areas along the path of the thread.

7. Any inquiry concerning this communication should be directed to Examiner Octavia Davis at telephone number (571) 272 - 2176. The examiner can normally be reached on Monday - Thursdays (9:00 - 5:00), Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on (571) 272 - 2180. The fax phone number for the organization where this application where this application or proceeding is assigned is (703) 872 - 9306.



OD/2855

9/9/04



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